



CTC & Remedial Action Cost Engineering and Requirements (RACER®)

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Engineering and Expeditionary Warfare Center
(NAVFAC EXWC)**

Overview of CTC and RACER® software for ER,N Cost Estimating

- **Cost-to-Complete (CTC)**
- **What is RACER®?**
- **What are the capabilities?**
- **RACER documentation for CTC**

CTC Considerations




- **Review a Site Management Plan or Program Schedule for timeline to reach RC or SCs**
- **Review Conceptual Site Model**
- **Gather site specific information and develop assumptions**
- **Consider the reasonably anticipated future land use and resource use for the site**
- **Estimate the most probable scenario, not the extremes**

CTC and Supporting Documentation



- All costs in NORM should be supported by User Defined Cost Models (UDCMs)
- Supporting Documentation must be retrievable
- All UDCMs in NORM must be backed up by supporting documentation
 - Detailed Cost Estimate
 - Decision Document
 - Similar Site
 - Actual Costs
 - RACER

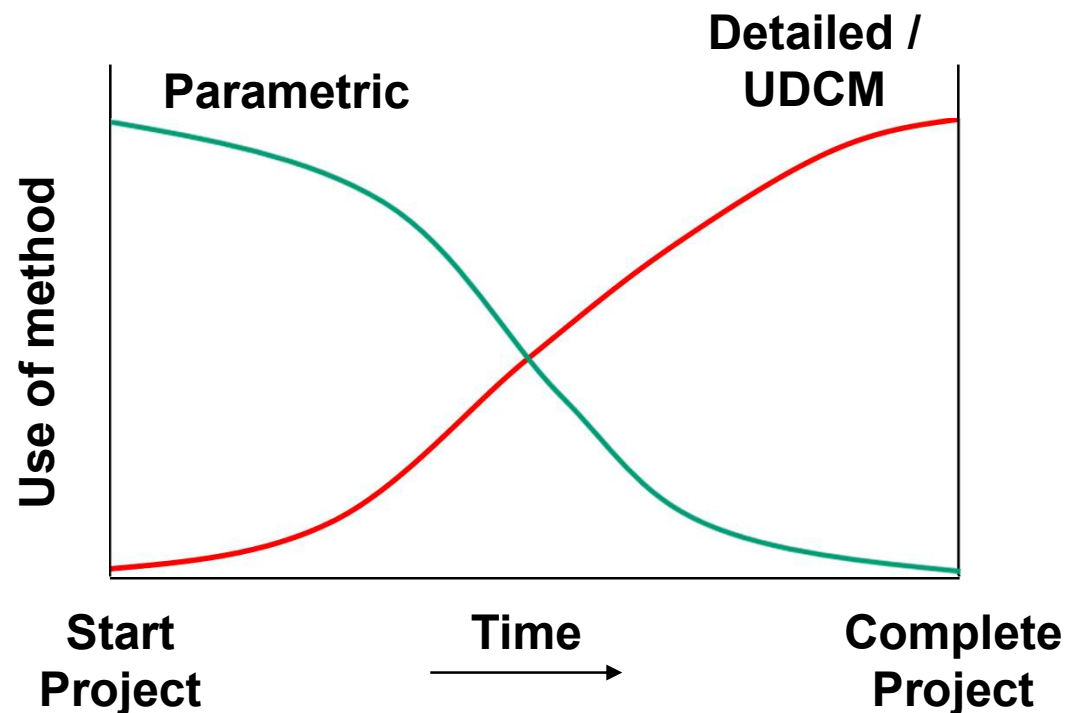


*Key Elements:
Complete, Correct,
Reasonable, Defensible
& Retrievable*

When to use RACER®?



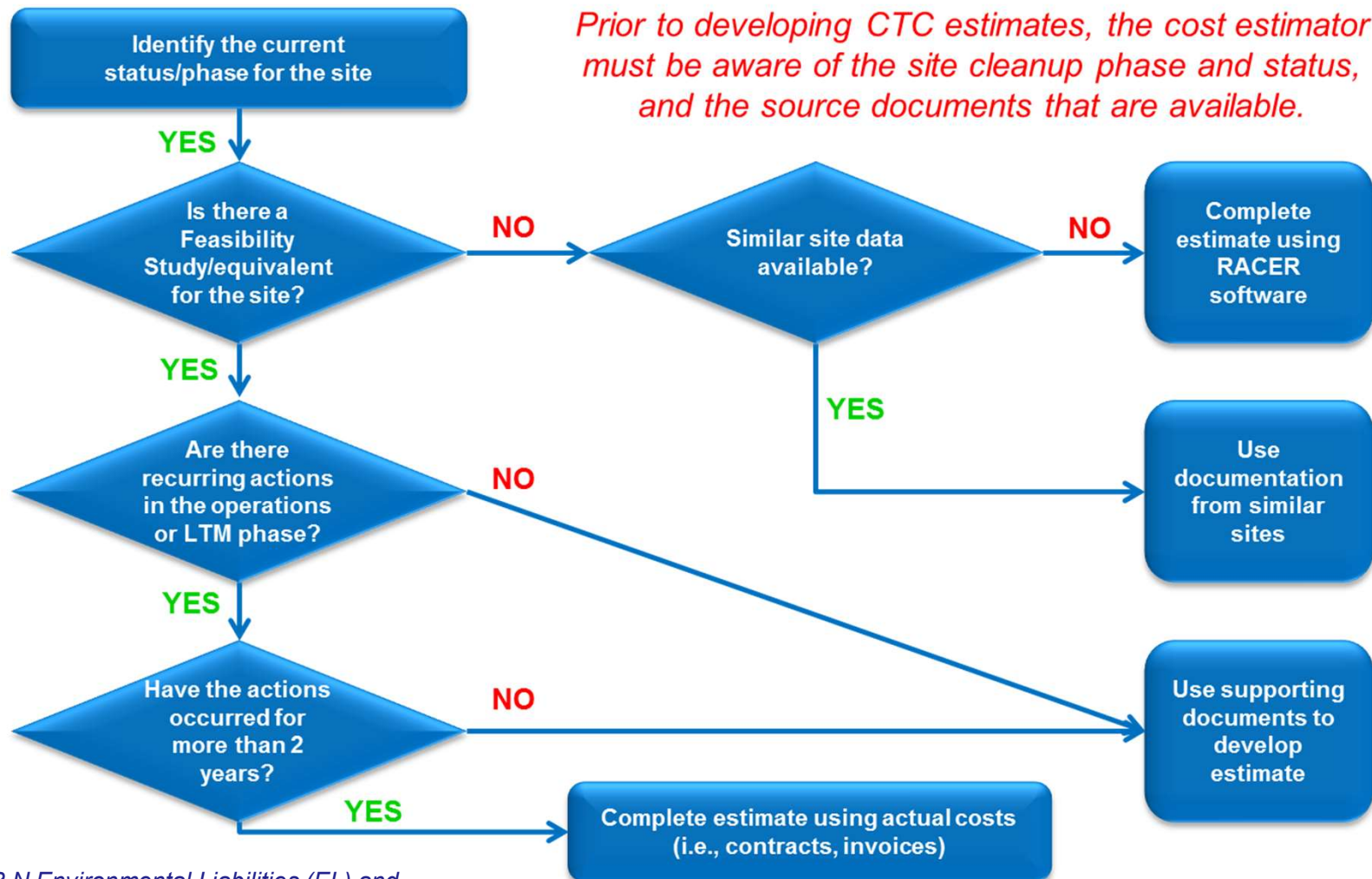
How does an RPM know when to use RACER vs detailed cost estimate (bottom up)?



*Navy ER,N Environmental Liabilities (EL) and
Cost to Complete (CTC) Webinar 2016*

When to use RACER®?

CTC Process - Documentation



Navy ER,N Environmental Liabilities (EL) and
Cost to Complete (CTC) Webinar 2016

What is RACER®?



- **Parametric cost-estimating tool**
- **RACER® stands for:**
 - **Remedial Action Cost Engineering and Requirements**
- **AECOM holds the exclusive license for RACER® software**
- **Costs primarily based on the Government Price Book, developed by Tri-Services Cost Engineering Committee**
- **The software completed a formal verification, validation, and accreditation (VV&A) process in 2001 and 2014**

What is RACER®?



- **Access® database program**
- **NAVFAC ER Program currently using **Version 11.3****
 - **30 licenses available**
 - **Distributed to FECs in 2016**
- **Licenses are transferable**
 - **Work through EXWC / AECOM**
- **Installed on the user's desktop**
- **No NMCI support required**

NAVFAC EV RACER® License Seat Count	
1	HQ
2	ATLANTIC
3	EXWC
4	HI/PAC
4	MIDLANT
3	NW
3	SE
7	SW/BRAC
3	Wash
30	Total

What is RACER®?



- **Used for estimating costs for PA/SI to SC**
- **Used for Installation Restoration Program and Munitions Response Program sites**
 - **MRP sites limited to terrestrial sites**
- **Best used in early stages of site cleanup**
 - **Phase 1 and Phase 2**
- **Support Documentation for site CTC User Defined Cost Model (UDCM)**
 - **With appropriate reports generated**

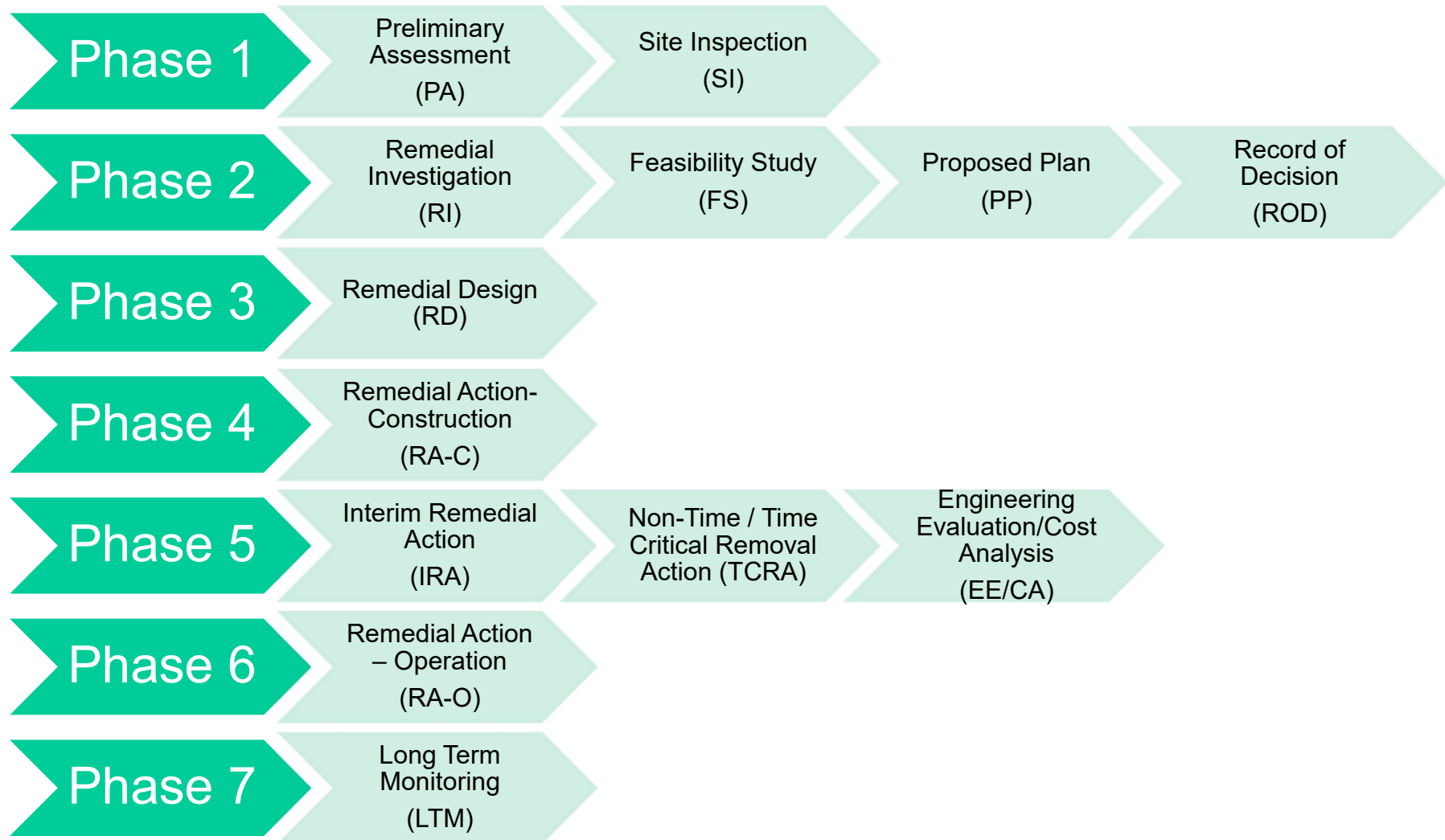
What is RACER®?



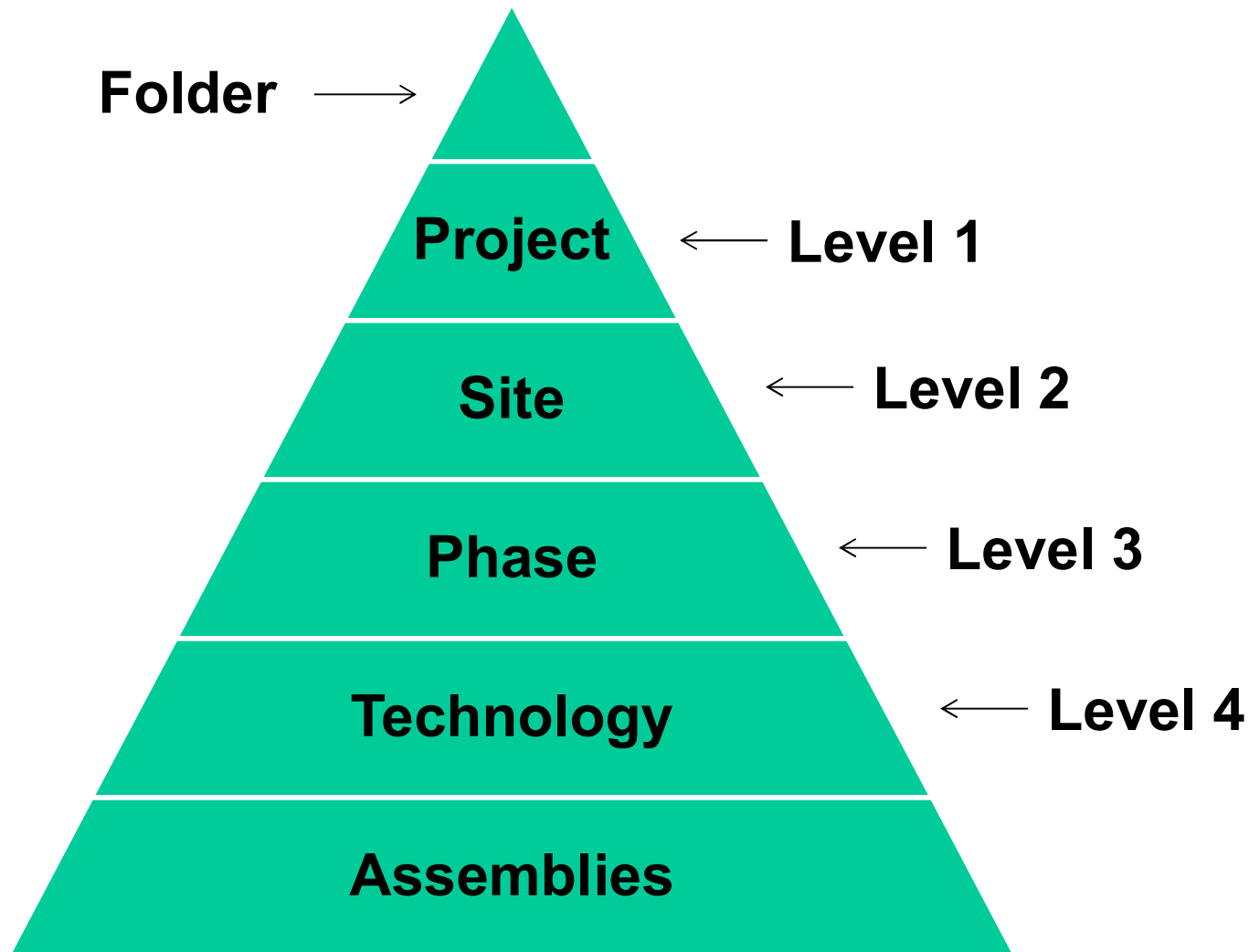
Phases of Remediation in RACER ®

- Pre-Study
- Study
- Remedial Design
- Removal/Interim Action
- Remedial Action
- Operations & Maintenance
- Long-term Monitoring
- Site Closeout

Navy Environmental Restoration Phases

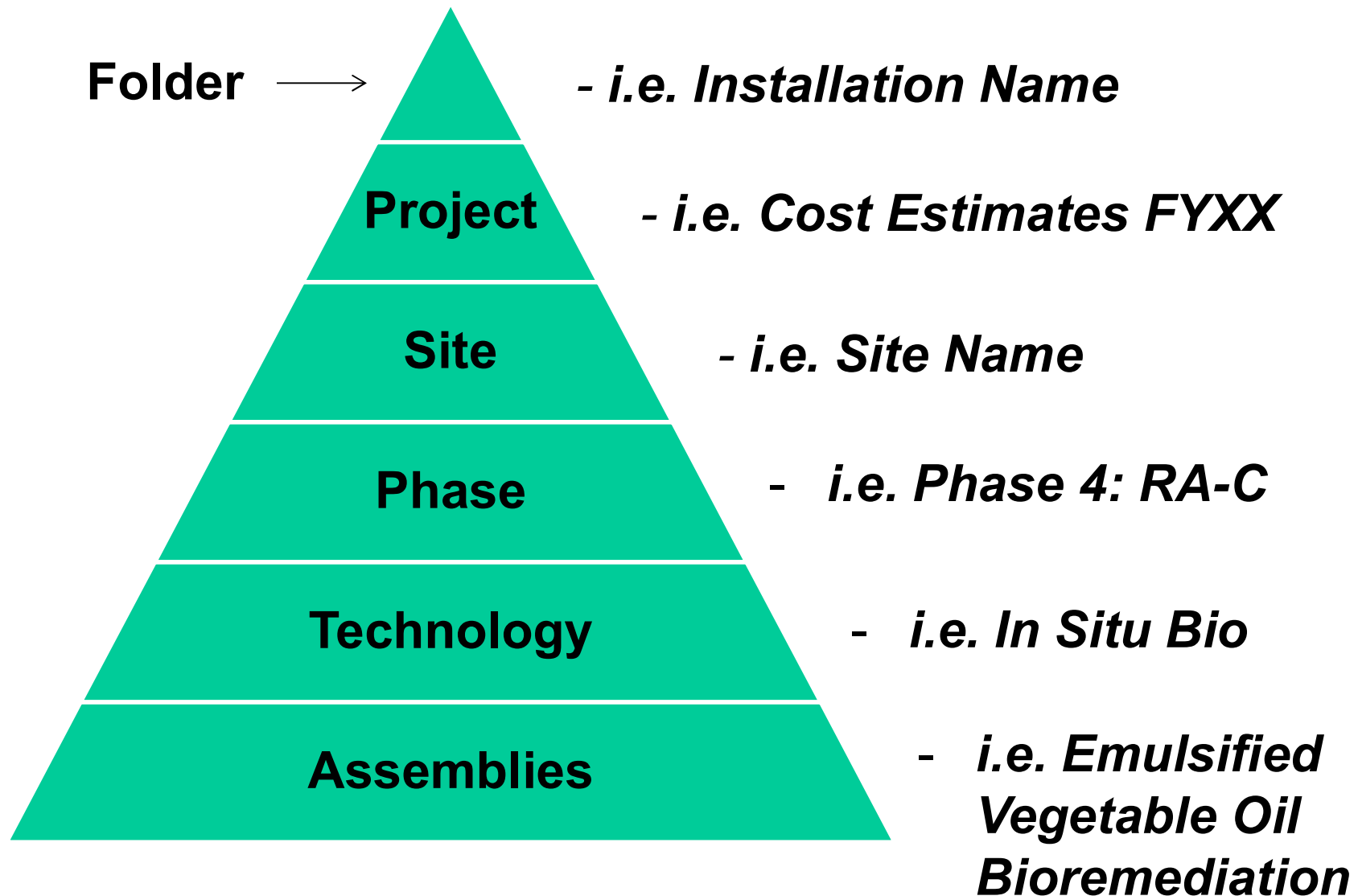


RACER ® Estimate Structure:



RACER ® Estimate Structure:

Navy ER,N Example



RACER ® 11.3 Technology Categories



Containment

Demolition

Discharge

Disposal

Documentation

**Ordnance
(Terrestrial)**

Radioactive

**Remediation
Support**

Removal

**Site Work &
Utilities**

Studies

Treatment

RACER ® 11.3 Technology Categories



Treatment

- Advanced Oxidation Processes
- Air Sparging
- Air Stripping
- Bioslurping
- Bioventing
- Carbon Adsorption (Gas)
- Carbon Adsorption (Liquid)
- Coagulation/Flocculation
- Composting
- Dewatering (Sludge)
- Ex-situ Bioreactors
- Ex-situ Land Farming
- Ex-Situ Solidification/Stabilization
- Ex-situ Vapor Extraction
- Heat Enhanced Vapor Extraction
- In-situ Biodegradation
- In-situ Land Farming
- Low Level RAD Soil Treatment
- Media Filtration
- Metals
- Precipitation
- Neutralization
- Off-site Transportation and Thermal Treatment
- Oil/Water Separation
- On-site Incineration
- On-site Low Temp. Thermal
- Desorption
- Passive Water Treatment
- Phytoremediation
- Soil Flushing
- Soil Vapor Extraction
- Soil Washing
- Thermal & Catalytic Oxidation

Key Report Outputs from RACER ® 11.3



Cost Summary Report

(Phase Level)

Cost Detail Report

(Phase Level)

Estimate Documentation Report

(Site Level)

Technology Cost Detail Report

(Phase Level)

Knowledge Check



- 1. T/F - RACER® is a parametric cost-estimating tool.**
- 2. Which report output option provides a list of the assumptions made about the Site?**
 - a) Cost Summary Report**
 - b) Estimate Documentation**
 - c) Cost Detail Report**
 - d) Technology Cost Detail Report**
- 3. T/F – RACER® is the most appropriate cost-estimating tool for sites in Phase 6 and Phase 7.**

Summary



- **RACER ® is a parametric cost-estimating tool that can be used to develop cost estimates**
- **Best used in early stages of site cleanup**
- **Available at each FEC and support available at NAVFAC EXWC**
- **Develop RACER ® estimates with Navy Phases in mind**
- **Be sure to generate applicable output reports for supporting documentation for CTCs**

Contacts and Questions?



RACER® Resources and Support

- **NAVFAC EXWC**

- Jennifer Segura (805) 982-1793
jennifer.segura@navy.mil
- Travis Borrillo (805) 982-4454
travis.borrillo@navy.mil
- Support email: EXWC-CTC-Support@navy.mil

- **FEC Local Support**

- **FEC EV staff that received 11.3 training**

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